REMARKS

Claims 48, 50, 55-61, 63, 67, 69, 71, 73, 75-78, 80 and 81 are of record.

Claim 63 stands rejected for various formal reasons and is proposed to be cancelled. Claim 69 is proposed to be amended to correct the editorial errors noted by the Examiner.

Claims 48, 57, 59, 60, 61, 75, 76, 77, 78, 80 and 81 are rejected as anticipated by Lindenblad, U.S. 2,686,219.

Claims 50, 55, 56, 58, 67, 69, 71 and 73 are rejected over the combination of Lindenblad in view of Ezra, et al., U.S. 5,666,226.

Claims 48, 57 and 69 are the independent claims.

Applicant's attorney, Gordon D. Coplein, thanks the Examiner for his courtesy in granting a telephone interview on June 24, 2005. During the interview, the differences between the system of the principal reference to Lindenblad, U.S. 2,686,219, and that of the application were discussed. Presented below is a discussion of that patent and the differences between the subject invention.

Summary of Invention

There is a complementary screen 1 that generates a two dimensional (2D) raster (could be of an original image). The raster is formed of pixels.

The raster of the complementary screen 1 is formed of raster elements, e.g., RE1 . . . REn. This is inherent in the structure. An RE can be composed one or more pixels.

The original raster on the complementary screen 1 is multiplied by:

a. making P copies of each of the complementary screen 1 raster elements RE1 . . . REn;

b. using the block deflection system (BDS) 6 to make P blocks of the RE copies. Each one of the P blocks contains one of the copies of all (each of) of the REs. That is, each one of the P blocks contains a copy of all (RE1 . . . REn) of the REs.

c. The P blocks, each one containing a complete copy of the image of the original raster of complementary screen 1, are modulated and placed on the display screen 5 in their proper places. That is, the blocks will be placed one by the side of the other (adjacent), and in parallel. Each of the P blocks is formed simultaneously. Thus, the original image of the raster on the complementary screen 1 is repeated P times. This improves the resolution of the original image.

Lindenblad, U.S. 2,686,219

This patent dates back to the 1950's when the FCC was deciding between the CBS (field sequential or color wheel) and the RCA (dot sequential, three pickup tubes) television systems. The color wheel was the CBS color system of the 1940's-1950's in which a wheel (disk) with three color filters (R, G, B) rotated in front of the object at the transmitter. A synchronized color wheel rotated in front of a display tube at the receiver.

Lindenblad discloses a color television transmitter/receiver system to electronically obtain both time separation (CBS - R, G, B rotating color wheel) and space separation (RCA - three pickup tubes, one for each color R, G, B) of an object. That is, the object of Lindenblad is to make the mechanical rotating color wheel system electronic. The Lindenblad system is described below.

Transmitter (Fig. 1). Object (image) is picked up by optical system (lens) 10.

The image is split by an optical splitter 11 into three light paths. Each light path has a color filter 12a, 12b, 12c to produce a respective different color component (R, G, B) of the original image.

Mirrors 15a, 15b are mechanically adjusted by knobs 16a, 16b to accurately position each of the three light paths from splitter 11 onto its respective color filter 12a, 12b, 12c. The color filter separately positions its respective color component (R, G, B) onto a respective light modulator 13a, 13b, 13c (detail in Fig. 2). The light modulators 13a, 13b, 13c are turned on and off and activated in sequence (column 5, lines 14-26) by a

keying voltage from a keyer 24. That is, two of the light modulators 13a, 13b, 13c are always off.

The light modulator 13 is described (column 5, line 35-column 6, line 45). To explain, referring to Fig. 2, the light of the respective color component (R, G or B) impinges on a photo-emissive input screen 30 which emits electrons that impinge on a secondary emissive screen 33 and then on a phosphorescent (light) output screen 31. The modulators (Fig. 2) 13a, 13b, 13c are keyed on sequentially (34). Therefore, the output screen 31 of each modulator 13a, 13b, 13c produces light corresponding to one of the color components.

The output light from screen 31 of each modulator 13a, 13b, 13c is sequentially input to a light converger 18 (a lens) whose output is to a pickup tube (iconoscope) 23. That is, the three separate components, or fields (R, G, B) of the <u>same</u> image are <u>sequentially imaged</u> on pickup tube 23. Each color component is scanned line-by-line by the pickup tube 23. The signal output of pickup tube 23 is that of three sequential color fields (color components) R, G, B. This is the equivalent of the three color fields produced by the CBS color wheel.

<u>Receiver (Fig. 3)</u>. There is a monochromatic (B&W) CRT 41 (column 7, line 22) that receives the video signal from the transmitter pickup tube 23. The video signal is three <u>sequential</u> and separate fields, i.e., the three color components. A light splitter (no number) receives light output (monochromatic) from the CRT 41 and splits it into three paths (not color). Each path is applied to a respective light modulator 13d, 13e, 13f. Each of these is a slight variation of the light modulator of Fig. 2 used in the transmitter. That is, each of 13d, 13e, 13d produces a light output of a different color (a color component of the original image) because it has a different phosphor output screen 31 (column 6, line 71-column 7, line 22).

The receiver (Fig. 3) light modulators 13d, 13e, 13f are keyed on sequentially and in synchronism with the transmitted light modulators 13a, 13b, 13c (column 7, lines 27-35). Note that two of the modulators 13d, 13e, 13f are off at any one time and block light transmission. This is the equivalent of the CBS color wheel at the receiver.

The modulators 13d, 13e, 13f sequentially output the three color components (or fields) of the original image. These color components are conveyed to a light converger 18a (lens). The three color components (one field of each color R, G, B) are sequentially viewed by the eye. Persistence of the retina seems to be relied on to merge the sequentially formed R, G, B color components back into the original image.

Summary of the Main Differences Between Invention and Lindenblad

The invention multiplies the original raster of the complementary screen 1 by P times and displays the result of the multiplication on the display screen 5 surface. This increases the resolution.

Lindenblad at the transmitter (Fig. 1) divides the original image into three color components R, G, B. At the receiver (Fig. 3) the three color components are re-assembled in sequence back into the original image. There is no increase in resolution. There is no image display screen on which the image is assembled.

In summary, in the invention the end product is a multiplication of the input. In Lindenblad, the end product is the same as the input.

The independent claims 48, 57 and 69 are now discussed relative to Lindenblad. As will be seen, Lindenblad lacks many of the claimed features.

Each of the independent claims 48, 57 and 69 (clause a) sets forth a complementary screen (the screen 1 of Fig. 1) that has a two dimensional array of pixels from which array (raster) of pixels a plurality of raster elements (RE) are generated. That is, the original 2D raster is inherently divided into or formed by a plurality of raster elements. The RE can be of one or more pixels.

Neither of Lindenblad's optical system 10 (Fig. 1) and/or light splitter 11 is a "complementary screen". They are only passive optical elements. Further, neither of these optical elements has, as clearly set forth in each of claims 48 and 69, a complementary screen that is one of light emitting or light source modulator elements so as to generate a raster of pixels. The optical elements 10 and 11 of Lindenblad are passive.

Further, each of independent claims 48, 57 and 69 (clause (b)) clearly recites a raster multiplying system which operates by making multiple copies of each of the raster elements of the original 2D raster of the complementary screen 1.

In Lindenblad, the original image viewed by the optical system 10 is not treated in terms of raster elements, i.e., a part of the original 2D array of pixels. As explained above, Lindenblad operates by viewing an original image (raster) and dividing this raster into, or extracting from it, its color components R, G, B. That is, Lindenblad ends up with different and lesser content versions (R, G, B color components) of the original raster. There clearly is no multiplication of any pixel or raster element.

Clause (c) of each of the independent claims 48, 57 and 63 recites the independent modulation of each of the P blocks formed by the copies of the raster elements. While Lindenblad has "light modulators" 13a, 13b, 13c, each one only produces a monochromatic light output version of the respective R, G, B color component of the original image. Independent claim 48 recites an array of these modulators with each modulator independently modulating the raster elements of one block "separately and simultaneously". In Lindenblad, the light modulator 13d, 13e, 13f cannot perform these functions. They are operated sequentially and not simultaneously.

Finally, each of claims 48, 57 and 69 calls for a surface on which the P image blocks are displayed. Each of these claims also sets forth that the number of pixels in the P image blocks in the display (on screen 5) is M, which is greater than the number N of pixels in the original raster on the complementary screen 1. This clearly shows a multiplication of the original number of N pixels.

In Lindenblad, there is no surface, such as a CRT, on which an image is displayed that is a multiplication of the original image is displayed.

On the output/receiver side of Lindenblad, Fig. 3, the three color components pass in sequence, through the "light converger" 18a to the viewer's eye. The "convergence" in converger is not as assembly of the three color components in one place to display the three color components of the original transmitted image. It only directs the

color components sequentially onto the eye for viewing. Nothing in Lindenblad corresponds to a surface on which there is a display of the P blocks as set forth in claims 48 and 53 or a surface on which all of the P blocks "are formed" as in claim 69.

As demonstrated above, the three independent claims of the application clearly differ in intent, structure and function from that of Lindenblad. Therefore, since the principal reference fails, all of the claims should be allowable. Again, the invention multiplies the original while Lindenblad dissects the original into three color components and sequentially presents the same three color components to the eye. The Ezra patent when added to the rejection does not overcome the basic deficiencies of the principal reference to Lindenblad. Also, many of the claims depend fromclaim 69 and refer to a holograph system that is not taught or suggested in either of the references.

During the interview, it was discussed that Lindenblad's receiver light modulators 13d, 13e, 13f might be considered a surface on which an image is displayed. It is again noted that the display surface 5 of the invention displays multiple copies of the original raster on screen 1. Applicant does not agree with this. In Lindenblad, each of these modulators can at best display only a part, that is, one color component, of the original image.

To make it abundantly clear that applicant's display surface 5 is not the same as Lindenblad's three light modulators 13d, 13e, 13f, claims 48, 57 and 69 are proposed to be amended.

Claim 48, clause (d) - the term "single image display surface" is used. The term "image display surface" appears in clause (e) of claim 57 so the proposed amendment does not raise a new issue. The word "single" is used in claim 48 and added to claim 57 to more clearly distinguish over the three light modulators 13d, 13e, 13f of Lindenblad's receiver where at the output of each one, one of the color components sequentially appears.

The amendment should be entered since it clearly places the application in condition for allowance. No new issue is raised.

If the amendment is not entered as placing the application in condition for allowance, then its entry is requested for purposes of appeal.

Prompt and favorable action is requested.

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Respectfully submitted,

By ______________________

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